 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION		NTSB ID: LAX97FA334		Aircraft Registration Number: N2429T	
		Occurrence Date: 07/23/1997		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place GABBS	State NV	Zip Code 89409	Local Time 0825	Time Zone PDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Navion		Model/Series G /G		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>HISTORY OF FLIGHT</p> <p>On July 23, 1997, at an undetermined time after 0825 hours Pacific daylight time, a Navion G, N2429T, owned and operated by the pilot, experienced an in-flight structural failure and crashed about 25 nautical miles (nmi) southeast of Gabbs, Nevada. Between 0800 and 0850, multiple cloud layers and rain showers existed in the vicinity of the accident site over the unpopulated, high desert terrain. The airplane was destroyed, and the non-instrument rated private pilot and passenger were fatally injured. The flight originated about 0655 from the Reid-Hillview Airport in San Jose, California. The pilot's intended destination was the Bob Wiley Field in Winner, South Dakota.</p> <p>The pilot's wife provided the National Transportation Safety Board with a copy of her husband's computerized flight plan log sheet. The pilot did not file his flight plan with the Federal Aviation Administration (FAA). The log sheet indicated that upon departure the pilot planned to initially fly along a magnetic course of 047 degrees for 167 nmi until reaching the Hawthorne Airport, Hawthorne, Nevada. The pilot then planned to proceed on a course of 042 degrees for the next 200 nmi. The projected ground speed for the first two legs of flight was 187 knots. All of the flight legs were indicated as direct routes. No airways were listed.</p> <p>After takeoff, the pilot requested and received radar flight following service from the FAA's Oakland, California Air Route Traffic Control Center (ARTCC). The FAA reported that the airplane's transponder signal was received intermittently. The FAA was not able to adequately track the target, and radar service was terminated.</p> <p>According to the California Wing of the Civil Air Patrol, the airplane was last recorded on radar at 0752:02 when located at 38 degrees 01 minute 23 seconds north latitude, by 119 degrees 41 minutes 41 seconds west longitude. At this time the eastbound airplane was approaching the western slopes of the Sierra Nevada Mountains. Minutes earlier, the pilot had reported to the FAA that he was climbing to 11,500 feet mean sea level (msl).</p> <p>On May 18, 1998, the airplane wreckage was discovered by cowboys in hilly terrain to the east of the Sierra Nevada mountains. The accident site was located about 47 nmi east-northeast (074 degrees magnetic) from the Hawthorne Airport, and approximately 26 miles southeast of the pilot's flight planned course.</p> <p>PERSONNEL INFORMATION</p> <p>The pilot's flight time information contained in this report was obtained from several sources including data which the pilot submitted to the FAA in his December, 1996, application for a third-class aviation medical certificate, from acquaintances of the pilot, and from remnants of the</p>					
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pilot's personal flight record logbook found at the crash site. Employees at Gavillan Aviation in Hollister, California, reported that the pilot accurately and meticulously recorded his flying activities.

On March 18, 1996, the pilot was issued a Private Pilot certificate. Between May and July, 1996, the pilot's logbook recorded five business related cross-country flights during which 12.2 hours were logged in actual instrument weather conditions. The flights were listed in the logbook's "pilot-in-command" column, and no safety pilot or certified flight instructor was listed as being in the airplane. In one of the flight entries the notation "GPS" was written in the "Actual Instrument" column.

The pilot's logbook also indicated that within 90-days of the accident he had flown his airplane about 52 hours. No instrument flight hours were recorded during this period.

**AIRCRAFT INFORMATION**

A partial photocopy of the airplane's maintenance records was obtained and reviewed from Gavillan Aviation. In pertinent part, the records indicated that on June 25, 1997, an annual inspection was completed on the airplane, and the Hobbs meter registered 0.0 hours. The mechanic who performed the inspection verbally acknowledged that the inspection was actually completed a few days earlier, likely around June 18. No evidence was located of any outstanding maintenance squawks. According to Gavillan's owner, during the inspection the airplane's oxygen tank was serviced and completely filled.

No original records were provided for the Safety Board's review. The airplane's total time was estimated, and it is based upon the mechanic's recollection.

**METEOROLOGICAL INFORMATION**

The nearest aviation weather observation station to the accident site is located at the Tonopah Airport, Tonopah, Nevada. The airport is located about 38 nmi east-southeast (121 degrees magnetic) from the accident site, and its elevation is 5,426 feet msl.


At 0800, a special weather observation was taken at the Tonopah Airport. Although the rain showers which occurred the previous hour had ended, some showers continued to be noted in the vicinity of the airport. The sky condition was reported as follows: few clouds at 400 feet above ground level (agl); scattered clouds at 2,700 feet agl; and a broken ceiling at 10,000 feet agl. The temperature and dew point were both 15 degrees Centigrade. The prevailing visibility was 12 miles and was lower in southwesterly to northerly directions (toward the accident site area).

At 0850, the sky condition was reported as follows: few clouds at 600 feet agl; scattered clouds at 2,000 feet agl; and a broken ceiling at 10,000 feet agl. Towering cumulus clouds were observed in all quadrants. The temperature and dew point were 18 and 16 degrees Centigrade, respectively. The surface visibility was 25 miles.

Satellite images in the infrared and visible spectrum were received from the National Climatic Data Center and reviewed by a Safety Board staff meteorologist. At 0830 and 0900, a rapidly developing area of cumulonimbus clouds was noted at the location of the accident site. (See attached reports.)

**COMMUNICATION**

The FAA's Western-Pacific Quality Assurance management reported that no preflight or in-flight communications occurred between the pilot and any flight service station. Also, a search of FAA facilities did not reveal evidence that any air-to-ground communications occurred with the pilot while passing over or east of the Sierra Nevada Mountains. No evidence of an emergency locator

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signal (ELT) was received.

**WRECKAGE AND IMPACT INFORMATION**

The engine assembly, wings, flaps, ailerons, and empennage were found separated from each other and from the fuselage. Wreckage was observed scattered over elevations between 5,400 and 5,700 feet msl. The entire airplane structure, including all flight control surfaces, was located at the accident site. There was no evidence of fire.

Along the wreckage distribution path, the first piece of wreckage located was a piece of left elevator-to-stabilizer fairing material. This was located at global positioning satellite (GPS) coordinates of 38 degrees 32.223 minutes north latitude, by 117 degrees 37.962 minutes west longitude. The elevators, tail, wings, and the main wreckage were located between the fairing material and the engine, which was located at 38 degrees 31.662 minutes north latitude, by 117 degrees 37.559 minutes west longitude. The distance and magnetic course between the first and last pieces of wreckage was approximately 0.64 nmi and 136 degrees. (See the Wreckage Diagram for additional information.)

An impact-damaged (destroyed) handheld type of GPS receiver was observed in the wreckage. It was found along with its two suction cup attachment fixtures next to the cockpit.

An oxygen cylinder, along with several feet of plastic tubing, and several nasal cannulas were found in the wreckage area. One cannula was observed in an unopened package, and another was without packaging material.

**MEDICAL AND PATHOLOGICAL INFORMATION**

The two occupants were found, with their seat belts attached, in the cockpit's front seats. The seats were located on a hillside and were observed separated from the cockpit and all other airplane structure. Inadequate specimens remained to perform an autopsy or toxicological tests.


The pilot's FAA medical certificate was issued for a duration of 12 months. The certificate was the subject of a special issuance due to the pilot's history of diabetes controlled with oral medication.

The pilot's dentist verbally reported to the Safety Board that the pilot had been treated on an emergency basis during the afternoon of July 21, 1997. The dentist stated that the patient was complaining of a pain in his mouth. The patient was examined and found to have an "advanced periodontal infection surrounding a lower molar." The infection was observed in the tissue around one tooth and the surrounding tissue was swollen. The dentist prescribed amoxicillin and Vicodin.

Later during the afternoon of July 21, the prescription for these drugs was filled in the pilot's name. According to a spokesperson for the dispensing pharmacy, the prescription was filled with drugs named Trimox and Hydroco. The pharmacist dispensed the Trimox with instructions to take the medication until gone. The pharmacist dispensed 20 tablets of the Hydroco with the instructions to take one tablet every 4 hours as needed for pain.

Pharmacy personnel reported that Trimox is an antibiotic. Hydroco is a narcotic pain-reliever that contains 500 mg of acetaminophen, and 7.5 mg of hydrocodone (similar to codeine).

Pharmacy personnel further reported that possible side effects from taking Hydroco include light-headedness, dizziness, and nausea. Precautions using the drug include exercising caution when engaging in activities requiring alertness such as driving or using machinery. Additionally, the drug can depress breathing.

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Numerous vials containing medications were found in the pilot's personal belongings at the accident site. In particular, vials marked Trimox and Hydroco were located. The pilot's wife subsequently reported observing 16 remaining tablets of Hydroco in the vial. The Safety Board was not able to determine the time interval between the pilot's last dose of Hydroco and the accident.

### TESTS AND RESEARCH

The airplane wreckage was recovered from the accident site. On June 17, 1998, it was examined while in storage at the facilities of Plain Parts, in Pleasant Grove, California. The following observations were made:

#### Propeller

The propeller was observed bent into an "S" shape and was torsionally twisted. Its cambered surface was found scratched in a chordwise direction. The leading edge of the propeller was observed nicked.

#### Engine

The spark plugs were visually examined, and the FAA opined that the plugs appeared in a serviceable condition. The engine's case was found impact damaged, and the crankshaft could not be rotated. A partial teardown examination was performed. The oil sump and rocker covers were removed. The mechanical continuity of the engine was confirmed. At the conclusion of the examination, the FAA and engine participant indicated that no evidence of any preimpact malfunction or failure had been observed in any of the examined components.

#### Airframe

An examination of the left and right side of the tail in the vicinity of where the horizontal stabilizers had been attached revealed no evidence of repair, discoloration, fatigue, or corrosion.

The left and right sides of the horizontal stabilizer-to-tail attachment fittings were observed broken on the tailcone. The breaks on the tail were oriented in outward and downward directions. The breaks were symmetrical in appearance.

The right horizontal stabilizer was observed torsionally twisted with its leading edge bent downward and the tip bent upward. The left horizontal stabilizer was found with its leading edge curled downward and twisted in an aft direction. The left stabilizer was found partially separated from its tail attachment structure. It was observed twisted aft of the elevator with the stabilizer's leading edge pointed in an aft direction (see photographs).

The outboard portion of the left elevator and the entire right elevator were found separated from the horizontal stabilizers. An examination of the gap seals at the trailing edges of the stabilizers revealed the bottom skins were bent in a downward direction consistent with the elevators having over-traveled at their hinge lines in a downward direction. No evidence was observed of the elevators having over-traveled in an upward direction. The corresponding elevator control cables, which remained attached to the separated tail section, were observed broken and exhibited tension overload "broomstraw" signatures.

The vertical stabilizer and rudder assembly remained attached to the empennage and appeared devoid of in-flight damage. The empennage was observed separated from the fuselage at the aft tailcone bulkhead. All of the attachment rivets circumferentially oriented around the tailcone exhibited sheer overload characteristics.

The entire right wing was observed broken from the fuselage at a location adjacent to the right side of the cabin. The entire left wing with the attached center section was found separated from

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the fuselage. The two front cockpit seats were found separated from the wing's center section. The rear cabin seats remained attached to the floor tracks in the wing.

**ADDITIONAL INFORMATION****Accident Time Calculation**

The straight-line distance between the airplane's last known position at 0752 and the crash site is approximately 102 nmi. Based upon this time, distance, and the pilot's projected ground speed of 187 knots, the Safety Board calculates that the airplane could have arrived at the crash site at 0825. If the airplane's average speed was reduced to 110 knots (its average speed based upon recorded radar data between 0734 and 0752) it would have arrived at the crash site at 0848.


**Prohibition On Operations During Medical Deficiency**


The FAA has published regulations regarding operating an airplane during periods of medical deficiency (see 14 CFR Sec. 61.53). In pertinent part, the regulation states the following:


A person who holds a current medical certificate shall not act as pilot-in-command while that person (1) knows or has reason to know of any medical condition that would make the person unable to meet the requirements for the medical certificate necessary for the pilot operation; or (2) is taking medication or receiving other treatment for a medical condition that results in the person being unable to meet the requirements for the medical certificate necessary for the pilot operation.

**Wreckage Release.**

The wreckage was verbally released to the owner's assigned insurance adjuster on June 17, 1998. No parts were retained.

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<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Approach/Arrival Flown:					
VFR Approach/Landing:					
<b>Aircraft Information</b>					
Aircraft Manufacturer Navion		Model/Series G /G		Serial Number NAV-4-2429	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	3315 LBS	Number of Engines: 1	
Engine Type: Reciprocating	Engine Manufacturer: Continental	Model/Series: IO-470-H	Rated Power: 260 HP		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 06/1997	Time Since Last Inspection 62 Hours	Airframe Total Time 3500 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type No	ELT Operated?	ELT Aided in Locating Accident Site?			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner  FRANK M. COLLINS		Street Address 4210 MONTEREY HWY, SPACE #8			
		City SAN JOSE	State CA	Zip Code 95111	
Operator of Aircraft  FRANK M. COLLINS		Street Address P.O. BOX 18040			
		City SAN JOSE	State CA	Zip Code 95158	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Business					
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<b>First Pilot Information</b>																																																																																																	
Name On File			City On File		State On File	Date of Birth On File	Age 59																																																																																										
Sex: M	Seat Occupied: Unknown		Occupational Pilot? Business			Certificate Number: On File																																																																																											
Certificate(s): Private																																																																																																	
Airplane Rating(s): Single-engine Land																																																																																																	
Rotorcraft/Glider/LTA: None																																																																																																	
Instrument Rating(s): None																																																																																																	
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Current Biennial Flight Review?																																																																																																	
Medical Cert.: Class 3		Medical Cert. Status: Valid Medical--w/ waivers/lim.			Date of Last Medical Exam: 12/1996																																																																																												
<table border="1"> <thead> <tr> <th rowspan="2">- Flight Time Matrix</th> <th rowspan="2">All A/C</th> <th rowspan="2">This Make and Model</th> <th rowspan="2">Airplane Single Engine</th> <th rowspan="2">Airplane Multi-Engine</th> <th rowspan="2">Night</th> <th colspan="2">Instrument</th> <th rowspan="2">Rotorcraft</th> <th rowspan="2">Glider</th> <th rowspan="2">Lighter Than Air</th> </tr> <tr> <th>Actual</th> <th>Simulated</th> </tr> </thead> <tbody> <tr> <td>Total Time</td> <td>580</td> <td>160</td> <td>580</td> <td></td> <td>48</td> <td>15</td> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td>460</td> <td>157</td> <td>460</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instruction Received</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td>70</td> <td>63</td> <td>70</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td>52</td> <td>52</td> <td>52</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td>2</td> <td>2</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	580	160	580		48	15	2				Pilot In Command(PIC)	460	157	460								Instructor											Instruction Received											Last 90 Days	70	63	70								Last 30 Days	52	52	52								Last 24 Hours	2	2	2							
- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument								Rotorcraft	Glider				Lighter Than Air																																																																														
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Seatbelt Used? Yes		Shoulder Harness Used? Unknown			Toxicology Performed? No		Second Pilot? No																																																																																										
<b>Flight Plan/Itinerary</b>																																																																																																	
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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
TPH	0850	PDT	5426 Ft. MSL	38 NM	121 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			0 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		10000 Ft. AGL		Visibility: 25 SM	Altimeter: 30.00 "Hg
Temperature: 18 °C	Dew Point: 16 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction: 140	Wind Speed: 9		Wind Gusts:		
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM				
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL	
First Pilot	1				1	
Second Pilot						
Student Pilot						
Flight Instructor						
Check Pilot						
Flight Engineer						
Cabin Attendants						
Other Crew						
Passengers	1				1	
- TOTAL ABOARD -	2				2	
Other Ground	0	0	0		0	
- GRAND TOTAL -	2	0	0		2	

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Administrative Information		
Investigator-In-Charge (IIC) WAYNE POLLACK		
Additional Persons Participating in This Accident/Incident Investigation:  ADRIAN GRIEVE RENO, NV  MIKE GRIMES LANCASTER, CA		
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